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AN APPLICATION OF HOLLAND'S
OCCUPATIONAL CODES TO AIR FORCE
OFFICER CAREER FIELDS

THESIS

Kevin R. Erickson
Captain, USAF

AFIT/GLM/LSM/85S-21

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AN APPLICATION OF HOLLAND'S
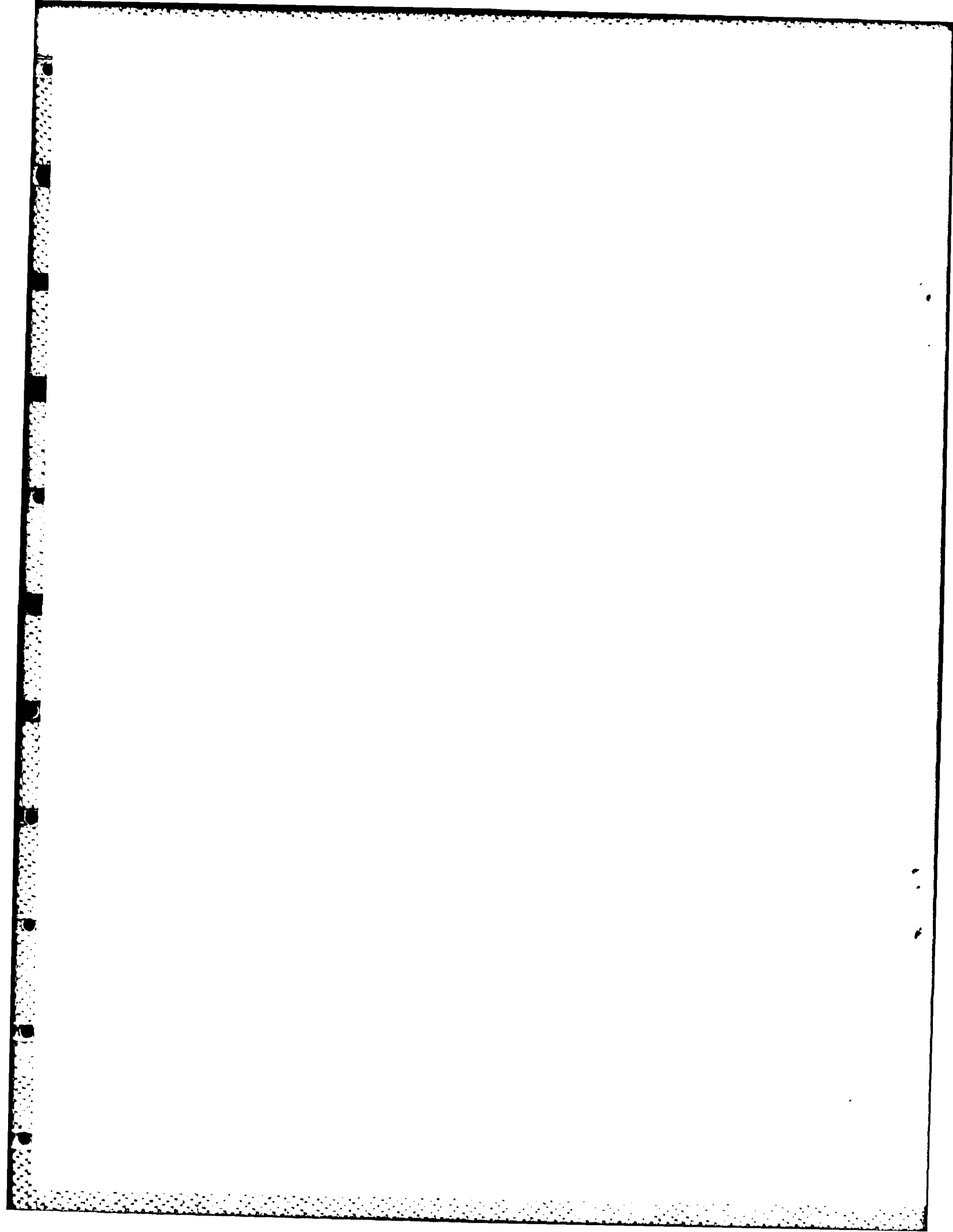OCCUPATIONAL CODES TO AIR FORCE
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AFIT/GLM/LSM/85S-21

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THESIS

Presented to the Faculty of the School of Systems and Logistics

of the Air Force Institute of Technology

Air University

In Partial Fulfillment of the

Requirements for the Degree of

Master of Science in Logistics Management

Kevin R. Erickson, B.S.

Captain, USAF

September 1985

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Abstract

The purpose of this research was to apply John Holland's "Theory of Careers" to the Air Force officer corps to explain career field and/or organizational satisfaction. Holland's theory states that work environments (occupations and organizations) and individuals are subject to classification, and the match, or "congruence," between individuals and their work environments can be used to predict job related outcomes, such as job satisfaction. To test the applicability of his theory among the Air Force officer corps, 193 officers from fourteen career fields completed a survey questionnaire and a Vocational Preference Inventory, a personality inventory developed by Holland for classifying individuals and work environments. Results indicated Air Force officer career fields are quite different from one another and their Holland classifications closely resemble classifications used to identify their civilian counterparts. A Mann-Whitney U test demonstrated significant personality differences between career fields. Eight comparisons were made, six resulting in significant differences. The congruence between individuals and their career fields and career field satisfaction was also

tested. The results of a Student's t-test indicated that individuals satisfied with their career fields were more congruent with their career fields than those dissatisfied. As for organizational satisfaction, one type of personality was most often found to be satisfied with the organization. The relationship of congruence and organizational satisfaction was measured with Pearson's correlation analysis, and no significant relationship was identified. The conclusion was that Holland's theories can be used in the Air Force to classify career fields and that the match between officers and their career fields is related to career field satisfaction. It was therefore recommended that the Air Force classify all career fields, thus providing valuable information to Air Force officers in making career related decisions.

AN APPLICATION OF HOLLAND'S
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I. Introduction

General Issue

Official Air Force policy is that "Individual officer

career development is essential to support the Air Force

mission" (Air Force Regulation 36-23, Officer Career

Development) (1:9). The objective of Air Force officer

career development is to prepare officers for advancement

and assumption of increased responsibilities (1:9). "While

the individual's aspirations and long-term development

are emphasized, Air Force requirements must have first

priority" (1:9). Based on this official career development

philosophy, the importance of effective individual career

management is succinctly stated by Eugene Jennings:

> The larger, more powerful the organization, the
> more men must manage their careers in terms of
> their own coordinates and free choices. [Career
> planning] allows men to intelligently counteract
> the arbitrary decisions of their corporations, to
> address themselves as private persons, and to
> restore the balance between the needs of the
> individual and those of the organization. In
> short, the highest good occurs at the point where
> self and corporation intersect for mutually
> beneficial purposes. [2:307]

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A review of the literature supports the notion that successful career development begins with a satisfying match between an individual and his occupation and organization.

Specific Issue

Matching people to jobs has been the main goal of vocational counseling since the 1920s (3:30). This is a worthy goal which benefits the individual and organizations for which they work. Pursuit of this goal by such prominent researchers as Edward K. Strong, David P. Campbell and John L. Holland has produced excellent results and widespread applicability to a vast array of occupations, including over 12,000 listed in the U.S. Department of Labor's Dictionary of Occupational Titles (DOT) (4).

Only recently has the wealth of vocational information been applied to the jobs within the military services. A soldier is not just a soldier anymore, but a soldier with a specialty, such as electronics, medical technology, or computer programming. The usefulness of vocational counseling techniques has been proven within the enlisted ranks, but the natural extension of these techniques to the military officer corps has yet to take place.

Air Force officers serve in well over 400 Air Force Specialty Codes (AFSCs) covering more than 40 different career fields (5). The Air Force organization is very

different from other organizations by virtue of its

mission, but many of its officer career fields directly or

indirectly correspond to civilian occupations. Therefore,

as with the soldier, a military officer is not just

an officer -- he is a military officer with a career

specialty. These specialties run from missile launching

to religious counseling and from accounting to psychology.

Granted, some military occupations do not appear to have

even an indirect counterpart in the civilian work world,

but even these jobs seem to attract certain types of

people. Therefore, it appears that the successful

application of vocational theory to civilian and enlisted

occupations could be successfully extended to military

officer occupations.

Applying contemporary vocational theory to the officer

corps will benefit both the individuals and the military

organization as a whole. Organizational effectiveness is

built upon the effectiveness of its personnel, and matching

individuals to jobs is one place to start that process.

John L. Holland's "Theory of Careers," as outlined in

his book Making Vocational Choices: A Theory of Vocational

Personalities and Work Environments (6), is a classic work

in the area of vocational psychology and may readily be

applied to the Air Force officer environment. The appli-

cation of two of Holland's concepts to the Air Force will

be explored in this research.

First, Holland has developed a system for classifying occupations. The broad occupational grouping of Air Force officer has been classified. However, it may very well be possible to go further and classify the many officer career fields within the Air Force.

The second application of Holland's work is his theory of congruence. Congruence is the term Holland uses to represent the degree of match between an individual and the characteristics of his or her work environment. Holland states that people with similar personality patterns or "types" congregate and create environments that reflect a group personality. He uses the degree of congruence or "match" between an individual's personality pattern and the group personality of his work environment to predict or forecast vocational choice, job satisfaction, job changes, vocational achievement, personal competence, and educational and social behavior (6). Specifically, Holland's theory of congruence will be applied to Air Force officers in an attempt to explain career field and/or organizational satisfaction. This leads to the primary research question.

Research Question

Can Air Force officer career fields be classified according to Holland's system, and can his theory of congruence explain career field and/or organizational satisfaction?

In order to answer this question, the following questions will be asked:

1. Are there personality differences between satisfied officers in different career fields?

2. Are individuals who are satisfied in their career fields more congruent with their career field than those who are dissatisfied?

3. Are there personality differences between those officers who are satisfied with the Air Force organization and those who are dissatisfied?

4. Does the degree of congruence between an individual and the organization relate to the individual's organizational satisfaction?

Scope of Research

This thesis is an exploratory attempt to apply Holland's classification system and theory of congruence to Air Force officers. Because this is an initial application, only the career fields represented by the military resident students at the Air Force Institute of Technology (AFIT) will be focused upon.

Approach to Problem

The approach to be used is based on a review of research methods used by Holland and others to study the subject of matching individuals to jobs and organizations.

The main instrument to be used is the Vocational Preference Inventory (VPI) which measures individual personality patterns. Identifying and classifying personality patterns is referred to as typing.

Data concerning career field satisfaction and organizational satisfaction will be collected in order to type the personalities of the career fields. This data will also be used to test Holland's congruence theory, i.e. that an individual's satisfaction is determined by the degree to which his personality fits or matches that of his occupation or organization.

Summary

This chapter has provided an introduction to the general issue of the need for effective Air Force officer career development and the resultant need for individuals to effectively manage their careers. The specific issue relating to effective development of careers is the need for a satisfying match of individuals to occupations and organizations. John Holland's classification system may be used to identify matches, and his theory of congruence was suggested as a potential means to explain job related phenomena, such as career field satisfaction. Research questions were stated, and the scope and approach of this study were outlined. The next chapter will provide a review of the literature that supports the necessity of

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proper choice of occupation and organization, and present

a more complete formulation of Holland's theory and its

applicability to the world of work. This will be followed

by a description of the methodology for answering the

research questions, a report of the findings and analysis

of the study, and finally, conclusions and recommendations.

II.   Literature Review

From the traditional military point of view, it
would be considered an act of disloyalty for an officer
to identify strongly with civilian occupations.   To some
officers, being a military officer is a commitment of
loyalty and dedication to the organization and any job
assigned is the right job for that officer so long as it
is good for the organization as a whole.   Any indication of
a lack of desire or strong aversion to some job or jobs in
the military would be viewed as disloyalty and/or a lack
of commitment to the organization.   Possibly, this type of
thinking may hinder, instead of help, the progress of
career development in military organizations.

Nonetheless, studies have shown that individuals
can strongly identify with their occupation and still be
committed to their organization.   People whose loyalties
lie with the organization are called "locals," and those
who are loyal to their profession are called "cosmopolitans"
(7:105,142).   These two extremes have been considered
mutually exclusive.   However, research shows that they
are separate loyalties, meaning that a person who is loyal
to his profession can also be loyal to his organization.
The factor that determines loyalty to the organization is

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the extent to which a person values the goals of the
organization (7:142).

This thesis explores the possibility that an officer
is not just a "local" but may be a "local cosmopolitan,"
and that there is a need for him to manage his cosmopolitan
career within the scope of his occupation as an Air Force
officer. In short, this is an effort to assess the
potential usefulness of Holland's work in assisting Air
Force officers in making career decisions.

Selection of Occupation and Organization

Need for Satisfying Work. An individual's career
begins with the selection of an occupation and organi-
zation. Proper selection depends on an individual's self
awareness of personal needs and interests, knowledge about
occupations and organizations, and on understanding the
value and importance of a satisfying selection.

A satisfying selection of work has long been
emphasized by vocational theorists. Since the 1940s,
Strong has emphasized the importance of job satisfaction
as a criteria for appropriate occupational choice (8).
Donald Super, a prominent vocational psychologist, states
that the "synthesis of a person's self-concept and the
external realities of the work environment" depends on the
compatibility between individuals and their occupations
(7:11). Douglas Hall states that people choose work to

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fulfill their interests, meet their needs, and express themselves (7:11). They do this because they spend such a large portion of their life at work, which, for most people, is a major influence in determining their overall quality of life. Work provides a setting for satisfying personal needs as described by Maslow, i.e., physiological, safety, social, ego, and self-actualization (7:5). In fact, Maslow found in his studies that self-actualized people often identify strongly with their work. Hall sums up the importance of work when he writes, "undoubtedly, the major source of stimulation and reinforcement for the personal development of the individual is his or her job" (7:121).

Career Guidance. To assist individuals in finding satisfying and fulfilling occupations, career counseling literature recommends many available methods. Always present in the recommendations are the admonitions for individuals to know who they are and to learn about potential occupations. "Knowing yourself," or self awareness, is a central concept in vocational psychology. "To know one's self . . . is considered to be a "sine qua non' (absolute requirement) for mature career development" (7:181). Knowing yourself is knowing your interests, expertise, and goals. Managers need this information to manage and direct their career choices more effectively. As a side benefit, managers who understand career interests

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and careers can more effectively manage people (7:7).
Among the more common means to assist individuals in
learning about their interests and needs are vocational
interest and personality inventories. Foremost among these
inventories are the Strong-Campbell Interest Inventory
(SCII) and Holland's Vocational Preference Inventory.

The second common requirement for successful career
selection is available information on occupations and
organizations. After getting to know one's self, an
individual needs to know about organizations, jobs, and
occupations. Proper fit of individuals to their work
depends on the mix of their interests, abilities, and the
requirements, rewards, opportunities, and other aspects of
their work environments (5:182). This goes right in hand
with what organizations should do for effective selection
and placement of personnel. They need to analyze the
jobs within the organization and identify the personal
attributes necessary for an individual's success in those
jobs (7:147).

Individual-Organization Fit. Choice of organization
may be even more important than the choice of occupation.
Hall states that there is a need to study the fate of
organizational choice. He cites a 1975 study by A. Shuh
that found that for many people, organizational choice
precedes their occupational choice (7:45).

A critical part of the development of your career
is the organization you work for. The organiza-
tion, after all, represents the work environment
which provides the conditions necessary for career
growth: challenge, support, autonomy, feedback,
etc. It is the organization which provides the
jobs, the supervisors, the reward system, the
promotion sequence, and the personnel policies
which will affect the way your career unfolds.
In fact, choosing an organization to work for
is often one of the most important career choices
a person can make. In some cases, choosing an
organization even affects one's future occupation,
because the organization may transfer a person
from one field to another (for example, from
engineering to marketing or general management).
The organization will be exerting a lot of control
over your life and career, so choose it wisely.
[7:185]

These words need to be well heeded by early career

decision makers. There is evidence that the type of

organization individuals look for, especially in the early

stages of their careers, can shape the later stages of

their careers (7:121). As previously mentioned, people

choose organizations that have climates that fulfill their

needs. It is argued that "interaction or congruence

between a person and his organization could affect career

outcomes" (7:31). Congruence, or being in tune with the

characteristics of the organization, affects the develop-

ment of an individual's abilities and determines his or her

job success (7:106). A good person-organization fit would

be expected to lead to lower turnover, more satisfaction,

positive work attitudes, and satisfaction related outcomes

like job commitment and fewer incidents of mental and

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physical health problems (9:10). Also, congruence may positively affect performance (11:56).

People whose needs fit the climate of an organization are rewarded more and are more satisfied than the individuals that fit less well (7:36). In an American Telephone and Telegraph (AT&T) study, company satisfaction, occupational satisfaction, and occupational involvement were correlated with managerial success (12). Even more recent research has found that there may be a strong relationship between satisfaction and performance. With the use of meta-analysis, which compensates for some statistical weaknesses in smaller sample studies, researchers have found correlations ranging from .17 to .33, with some individual studies among white collar occupations reporting correlations as high as .44 or better (13:251,268; 14:716).

Group performance is also enhanced by matching people to organizations. Research by Schnieder found that as more individuals within an organization matched the organizational environment, group performance increased (15:131).

Other benefits that may arise from the individual-organization fit are increased occupational involvement and commitment to the organization. As involvement and commitment grows, the individual integrates himself more with the organization and the organization's goals become his goals (7:96). Thus, it appears that the Air Force

could greatly benefit as an organization by implementing contemporary career management techniques that accentuate the process of matching individuals to occupations and to the organization.

John Holland addresses this entire matching issue with his "Theory of Vocational Personalities and Work Environments," also known as "Theory of Careers" (6). Holland's main hypothesis is that individual job satisfaction, performance and other outcomes are the result of the interaction between the individuals and their occupation/organization.

Holland's work could be employed by the Air Force to assist officers in managing their careers. Holland's Vocational Preference Inventory (VPI) could be used to provide individuals with information on their interests and aid in identifying what type or types of individuals are satisfied with the organization and particular career fields, thereby assisting the individual in assessing his compatibility with the organization and/or his probable match with the various career fields.

A Review of Holland's Theories

Holland's "Theory of Careers" can be used to explain common career phenomena by focusing on individuals and their occupations. His theory provides explanations for three common and fundamental questions found not only in the civilian work world but in the Air Force as well (6:1).

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1. What personal and environmental character-
   istics lead to satisfying career decisions,
   involvement, and achievement, and what
   characteristics lead to indecision, dissatis-
   fying decisions, or lack of accomplishment?

2. What personal and environmental character-
   istics lead to stability or change in the
   kind of level and work a person performs over
   a lifetime?

3. What are the most effective methods for
   providing assistance to people with career
   problems?

In his theory, Holland states that people can be
characterized by six personality types: Realistic,
Investigative, Artistic, Social, Enterprising, and
Conventional. Each type exhibits certain behaviors and
traits that distinguishes it from the other types. He uses
the same categories to type work environments (occupations
and organizations), and states that the interactions
between personality and environment can be used to predict
outcomes such as vocational choice, stability of choice,
and performance (6:2).

Holland's theory is based on four "working
assumptions" (6:2).

Assumption Number 1

In our culture, most persons can be categorized
as one of six types: realistic, investigative,
artistic, social, enterprising, or conventional.

A type is a theoretical or ideal model that can be
used to measure real people. Each type is produced through

an interaction of cultural and personal forces that
include heredity, physical environment, peers, parents,
school, culture, etc. As a result of these influences
and experiences, a person develops a typology for coping
with problems and tasks of the environments. Holland
states that all types actively strive for fulfillment and
actively seek and avoid different kinds of environments
(6:3). Clinical interpretations of Holland's six
personality types are as follows (16:10-12):

Realistic: These people regard themselves as
practical-minded, masculine, and normal people.
Their hard-headed orientation is consistent with
their mechanical skills and interests and their
lack of skill in interpersonal relations, low
social interests, and aversion for problems
requiring sensitivity to one's own feeling, or
those of others as in the arts or persuasive
roles.

Investigative: These types are concerned with
science, mathematics, and theory. Prefer to
"think through" problems rather than "act out"
problems. Value science and aesthetic problems.
Depreciate social, political, and business
activities. Tend to be bright, scholarly, and
persistent. Have high educational aspirations.

Social: This type has social interests, prefers
teaching or therapeutic roles. Is responsible,
accepting of feminine impulses and roles, and
facile and insightful in interpersonal relation-
ships. A social type is good at role playing
and has the ability to relate to others, or
the ability to form "close" as opposed to
"superficial" relationships.

Conventional: Conventionals are conforming,
status-oriented, ethnocentric, and not original.
They have intercepted the culture with unusual
completeness. Often they appear controlled and
defensive. They prefer structured rote verbal
and numerical activities. Generally prefer

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subordinate roles. They seem to achieve their
goals by conforming, living by the rules, and
ordering their lives. . . . Their habitual sub-
ordination of their personal needs appears to
make them generally productive and effective
in well-structured tasks. Their values and
attitudes include strong identifications with
power, externals, money and status.

Enterprising: Enterprising types are dominant,
sociable, cheerful, and adventurous. Differ from
conventional types in their need for ambiguous
verbal tasks rather than structured activity and
a greater need for power. . . . These types
prefer social interaction as a medium of personal
expression, but dislike well-defined language
or work situations. Conceive of themselves as
strong leaders. Regard their verbal and per-
suasive skills as their greatest assets. Have
strong needs to achieve and secure high status.

Artistic: Artistic types have artistic, musical,
and literary interests. Resemble the stereotype
of the artist in some ways -- may be immature,
anxious, sensitive and feminine. Tend to be
original, imaginative, complex, unconventional,
and introverted.

These six developed types, which can be combined in

various combinations, represent a person's personality

(6:3). With a six-category scheme, there are "720

different personality patterns or repertories for coping

with the environment" (6:3). Holland's method for

estimating personality patterns or profiles is his

Vocational Preference Inventory (VPI). The results from

the VPI provides the individual with a personality profile.

This profile indicates the strength to which an individual

represents the six different types.

Assumption Number 2

There are six model environments: realistic,
investigative, artistic, social, enterprising,
and conventional. [6:3]

Each work environment is dominated by a given type of
personality. For example, Enterprising environments are
"dominated" by Enterprising types of people. The dominant
type is the one with the largest representation within an
environment's population (6:3). The dominant type in a
group is self reinforcing.

Because different types have different interests,
competencies, and dispositions, they tend to
surround themselves with special people and
materials and seek out problems that are con-
gruent with their interests, competencies, and
outlook on the world. [6:4]

The different environments create atmospheres that
produce different goals and outcomes. These atmospheres
influence and reinforce certain traits. It may not be
unreasonable to hypothesize that environments may
discourage or punish incongruent behavior (4:5).

"Thus, where people congregate, they create an
environment that reflects a group personality type, and
it becomes possible to assess the environment in the way
people are assessed individually" (6:4). Holland uses the
Environmental Assessment Technique (EAT) to categorize the
environment's population. With the use of the VPI, the

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members of the population are typed, and that type most

often found is the type assigned to that environment.

Holland states the need for typing subenvironments as

well in the following statement:

> Employees working in different departments of a
> large organization undergo different experiences.
> It is therefore important to assess the subenvir-
> onmental unit that makes up the largest or most
> influential portion of a person's environment.
> [6:35]

The environment of the Air Force, since it is

dominated by Realistics, can be classified as Realistic.

According to Table 6-6 in the Manual for the Strong-

Campbell Interest Inventory (SCII), 1981, which uses

Holland's general occupational classification system, the

'occupation' of an Air Force officer is classified as

Realistic. However, according to Holland's system for

typing organizations, the 'Realistic' classification is

more of an indication of the organization's environment and

not necessarily an accurate classification of the actual

occupations found within. In developing the Air Force

officer scale, the authors of the SCII considered all

officers to be of one type, regardless of Air Force

Specialty Code (AFSC); fighter pilots, social actions

officers, medical officers, legal officers and others were

all considered the same.

Considering a collection of officers as a supposedly

homogeneous group may render an inaccurate description of

the occupation of Air Force officer. The mean general scale scores for the composite work world are nearly the same as those listed for the occupation of Air Force officer. This correspondence in scores is displayed in Table I. Therefore, since the mean scores of all occupations combined are like the Air Force as a whole, this may be an indication that the occupation of Air Force officer is a microcosm of the work world and not a representation of each Air Force Officer career field within that occupation.

In addition, when considering the difference between career fields within the Air Force officer occupation, it is not unreasonable to further conjecture that these career fields can be classified in the same manner as civilian career fields are classified. A priori evidence of this idea is provided by the fact that the Air Force publishes Air Force Manual 36-1, Officer Classification, which describes Air Force officer career fields.

Therefore, Holland's method for classifying occupations may well be applied to the Air Force officer corps. Holland classified occupations by administering the VPI to students entering various professions. Their scores were averaged on the six scales. The highest mean score was used to type the occupation, and the second and third highest scores and so on were used to form that occupation's personality pattern or subtype.

TABLE I

Mean General Theme Scores for All Occupations
and Occupations of Air Force Officers

	Personality Type*					
	R	I	A	S	E	C
All Occupations Combined	53.5	51.1	47.4	49.9	50.8	50.4
Air Force Officer Occupation	55.0	51.0	46.0	49.0	50.0	52.0

Source: Manual for SCII, 1985 edition

*R = Realistic
 I = Investigative
 A = Artistic
 S = Social
 E = Enterprising
 C = Conventional

Assumption Number 3

People search for environments that will let them exercise their skills and abilities, express their attitudes and values, and take on agreeable problems and roles. [6:4]

In essence, birds of a feather flock together; Conventional types seek Conventional environments, Artistic types seek out Artistic environments, and so on. In turn, some organizations seek out people for their environments by recruiting (6:4).

Assumption Number 4

Behavior is determined by an interaction between personality and environment. [6:4]

The pairing or matching of individuals and environments have certain predictable outcomes such as job satisfaction, job changes and performance, as previously stated (6:4).

Holland adds other concepts to the four assumptions to "moderate and qualify predictions or explanations that are derived from the main concepts" (6:4). These secondary concepts are calculus, consistency, differentiation, identity, and congruence (6:4).

Calculus. Holland's calculus or specialized system for ordering the relationships between types of individuals and environments is the hexagonal model (see Figure 1). "The distances between the types or environments are inversely proportional to the theoretical relationships

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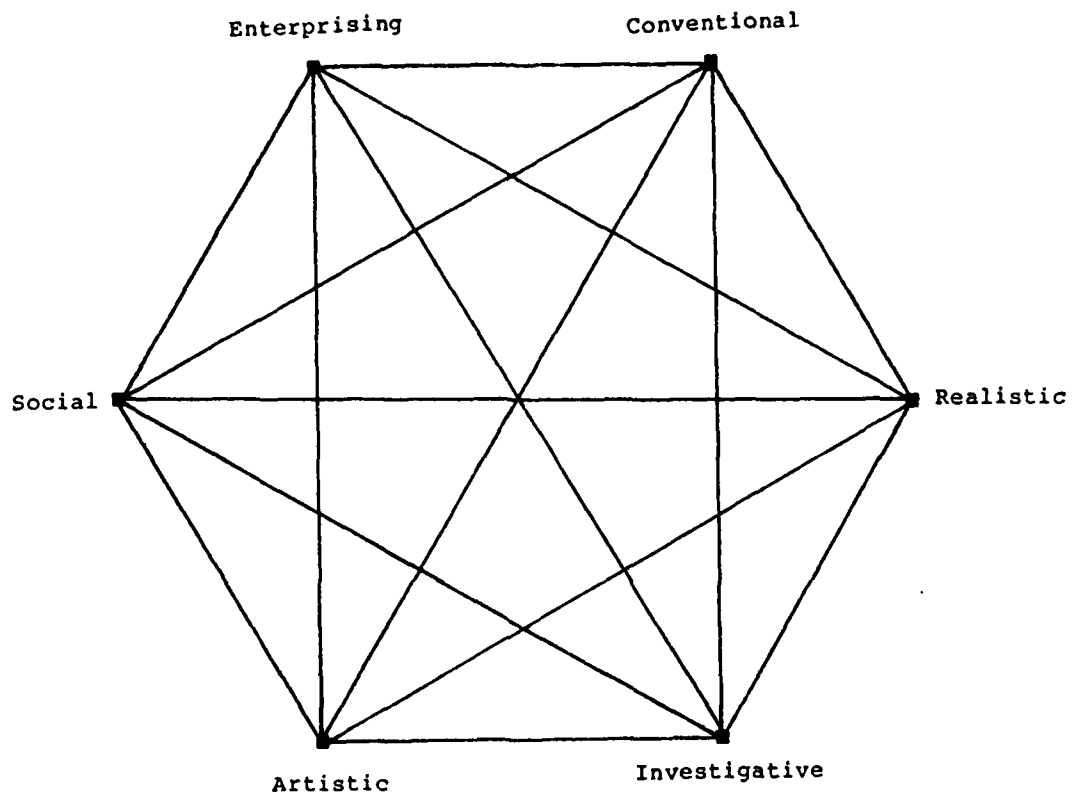
Figure 1. A Hexagonal Model for Defining the Psychological
Resemblances Among Types and Environments and
their Interactions

between them" (6:5). Table II displays the correlations between the types.

Consistency. Consistency refers to the relatedness between types. This is true for both people and environments. For example, Artistic and Social types have more in common than Artistic and Conventional types. Degrees of relatedness or consistency affect the predictability of individuals or environments. The more consistency that is present, the more the accuracy of predictability increases (6:4).

Differentiation. Differentiation refers to how clearly defined an environment or individual is by type. A differentiated individual is one that closely resembles only one type. An undifferentiated profile for an individual occurs when the scores on the six scales are approximately equal. A highly differentiated environment is one largely dominated by a single type. An environment that has an equal number of types is undifferentiated (6:5).

Identity. The concept of identity "provides an estimate of the clarity and stability of a person's identity or the identity of the environment" (6:4). Personal identity is where an individual has a solid understanding of his talents, interests, and goals. Environmental identity is present when stable, unambiguous tasks, goals, and rewards are present for long periods of time (6:5).

TABLE II

Intercorrelations Between General Occupational Themes

	Personality Type*					
	R	I	A	S	E	C
Realistic	–	–	–	–	–	–
Investigative	.26	–	–	–	–	–
Artistic	-.09	.43	–	–	–	–
Social	.13	.15	.22	–	–	–
Enterprising	.35	-.11	-.10	.42	–	–
Conventional	.38	.11	-.18	.29	.59	–

Source: Manual for SCII, 1981 edition.

*R = Realistic
 I = Investigative
 A = Artistic
 S = Social
 E = Enterprising
 C = Conventional

Congruence. Congruence, which was briefly discussed
earlier, refers to the matching of personality types with
similar environmental types. Holland states that
"Realistic types flourish in Realistic environments because
such an environment provides the opportunities and rewards
a Realistic type needs" (6:5). Incongruence leads to
rewards and opportunities which are not preferred or valued
by the individual (6:5).

Evidence Supporting Congruence Theory

Congruence of a person and his or her environment
leads to vocational stability over long periods of time and
to job satisfaction. Campbell states,

> An impressive amount of research evidence
> supports the notion that the match between the
> characteristics of the individual -- whether
> interests, needs, aspirations, or other traits
> -- and the characteristics of the job is an
> important indicator of the person's feelings
> toward the job. [17:126]

Since Campbell's statement in 1975, research on
Holland's theory of congruence suggests that congruence
is positively associated with job satisfaction. Several
studies support the notion that congruence between
occupations and individuals is directly related to job
satisfaction (18; 19; 20; 21; 22; 23; 24). In a study by
Mount and Muchinsky, congruence was defined as a match
between an individual's type and that of the occupation.

Their "results indicated that congruence of type and work environment is related to total job satisfaction (p < .01)" (21:95). Wiggins, Lederer, Salkowe and Rys found that congruence among high school teachers was the best predictor of satisfaction (r = .57) (23:114). Gottfredson, an associate of Holland, in a study of newly hired bank tellers, found that congruence of VPI score and occupation type was "correlated at .42 and .22 with satisfaction for males and females, but 'expected' satisfaction had a higher correlation for both sexes (.62 for males and .52 for females)" (4:114).

Peiser and Meir administered an interest inventory similar to the VPI that assessed eight interests and found that satisfaction with current occupation choice was positively correlated with congruence of interests measured seven years earlier (19:115).

Given the apparent value of matching individuals to jobs and organizations and the usefulness of Holland's theory in matching and measuring the strength of these pairings, it seems apparent that his work can be applied to the Air Force officer corps.

Research Questions

In order to determine applicability to the Air Force, the following research question was stated in Chapter I:

Can Air Force officer career fields be classified according to Holland's system, and can his theory of congruence explain career field and/or organizational satisfaction?

In order to answer the primary question, four specific questions were asked:

Research Question One. Are there personality differences between satisfied officers in different career fields?

As previously mentioned, the Air Force is an extremely large organization with over 400 specific jobs covering more than 40 career fields. These career fields are very different and, for the most part, appear to form a microcosm of the composite work world where personalities are found to be quite different between occupations. Based on this, it is expected that personality differences will also be found between Air Force officer career fields. Also, when the career fields are typed or coded with Holland's typology, it is expected that their codes will resemble the codes used to classify their civilian counterparts.

Research Question Two. Are individuals who are satisfied in their career fields more congruent with their career field than those who are dissatisfied?

The congruence between individuals and their occupations has been shown to be related to job satisfaction, and there is little or no reason to believe that this

would not apply to Air Force officers as well. It can then be expected that those officers who are satisfied with their career fields will be more congruent with their career fields than those who are dissatisfied.

Research Question Three. Are there personality differences between those officers who are satisfied with the Air Force organization and those who are dissatisfied?

Hall and others refer to the importance of fit between the individual and the organization. Holland states that certain types of individuals are attracted to and flourish in certain organizations that match their personality type. Also, those individuals that are mismatched with their organizations are more likely to be dissatisfied with the organization.

Considering Holland's theory that organizations create and reinforce certain types of environments and that individuals who match their organization are more likely to be satisfied with the organization, it is expected that there are personality type differences between those who are satisfied with the Air Force organization and those who are dissatisfied.

Furthermore, the types who will be satisfied or dissatisfied can be predicted with the use of Holland's hexagon, which represents the relationships between types. Since the Air Force organization is typed as Realistic, those who are satisfied with the organization are expected

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to be Realistic. Also, because the Investigative and
Conventional types are consistent, or adjacent with the
Realistic type, the satisfied individuals will tend to
be of these types as well. On the other hand, those
individuals who are more Enterprising, Social, and/or
Artistic will make up the dissatisfied group because these
types are less consistent with the Realistic type.

   Research Question Four. Does the degree of congruence
between individuals and their organizations relate to their
organizational satisfaction?

   Finally, Holland and Hall suggest the use of Holland's
theory of congruence to evaluate the degree of match
between individuals and organizations. Evidence supports
this proposition, but these studies have focused more on
occupations and not on large organizations that have a vast
array of jobs. Nevertheless, the Air Force organization as
a whole creates an overall environment that is consistent
for all officers regardless of career fields. Therefore,
a direct relationship between congruence and organizational
satisfaction is expected.

III. Methodology

This research is an exploratory study to determine if Air Force officer career fields are subject to Holland's classification system, and to test Holland's congruency theory.

Sample

The population is all Air Force officers and the many career fields they represent. However, because this is only an exploratory attempt to apply Holland's work to the officer corps, only those career fields represented by the resident students at the Air Force Institute of Technology (AFIT) were sampled. These career fields are expected to provide enough variety to display differences, if they exist. If differences were found in this sample, it may, therefore, be possible to generalize that there may be differences among the other career fields not included in the sample.

The sample population of students at AFIT's School of Engineering and the School of Systems and Logistics represent nearly half of all Air Force officer career fields. The numbers representing each career field were in some cases very limited. Therefore, only fourteen career fields

were used in this study. Three hundred surveys were
distributed to students in these career fields.

Measures

Participants completed the Vocational Preference
Inventory (VPI), a questionnaire, and their congruence with
career fields and the organization was measured graphically
on Holland's hexagon.

Vocational Preference Inventory. The VPI is a
personality inventory composed of only occupational titles.
It provides general information concerning the individual's
interests, values, self conception, coping behavior, inter-
personal relations, and identifications (18:1). It has
eleven scales: realistic, artistic, social, investigative,
enterprising, conventional, masculinity, infrequency,
status, acquiescence, and self control. The inventory
is self administered and hand scored with the use of a
stencil.

The VPI test-retest reliability is shown in Table III.
It suggests that the VPI has "moderate to high reliability"
(16:8).

Questionnaire. A thirteen-item questionnaire was
contained in the survey package. It was used to collect
data concerning each individual's level of satisfaction
with his or her career field, and the level of satisfaction

TABLE III

VPI Reliability Coefficients (Retest)

VPI Scales	College Freshmen (N=26) 1 year	College Seniors (N=17) 6 weeks	National Merit Finalists		Adult Women (Mean Age 40.7)	
			Men (N=432)	Women (N=204)	(N=31)	(N=28)
			4 years		2 wks.	2 mo.*
Realistic	.86	.92	.58	.49	.79	.57
Investigative	.65	.83	.52	.56	.71	.71
Social	.76	.79	.56	.49	.72	.66
Conventional	.61	.74	.47	.45	.83	.84
Enterprising	.71	.78	.61	.51	.65	.79
Artistic	.73	.98	.61	.51	.73	.69
Self Control	.84	.86	.52	.49	.79	.58
Masculinity	.82	.85	.53	.42	.75	.78
Status	.84	.62	.48	.33	.72	.70
Infrequency	.78	–	.41	.46	.66	.80
Acquiescence	.93	–	.52	.27	.71	.62

*Time interval

Source: Holland, Manual for the Vocational Preference Inventory

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with four organizational variables.   A complete question-
naire is presented in the Appendix A.

   Congruence Measure.   In order to portray the relation-
ship between career fields, individual VPI scores, and the
organization, a graphing method developed by Dale Prediger
utilizing Holland's hexagon was employed.

   Prediger developed a graphing technique relating
to Holland's hexagon by studying the theory that all
occupations have some involvement with four work tasks-
data tasks, idea tasks, people tasks, and things tasks.
These tasks were placed on two dimensions with one
dimension running from people to things, and the other
running from ideas to data.   These two scales are combined
and superimposed on Holland's hexagon, as shown in Figure
2.   Weights for the corresponding Holland types can then
be determined.   For example, Realistic (R) and Social (S)
types both receive weights of zero on the data/ideas
dimension; the R types receives a weight of +2 on the
things/people dimension and S type receives a weight of
-2 (25:24).

   The usefulness of Prediger's method was displayed in a
study where 72 occupations listed by their VPI scales were
scored on the two dimensions and then compared with a more
complex scoring method (Cooley-Lohnes Procedure).   The
correlation between the two scores on data/ideas was .92
and on the things/people was .92 (25:26).
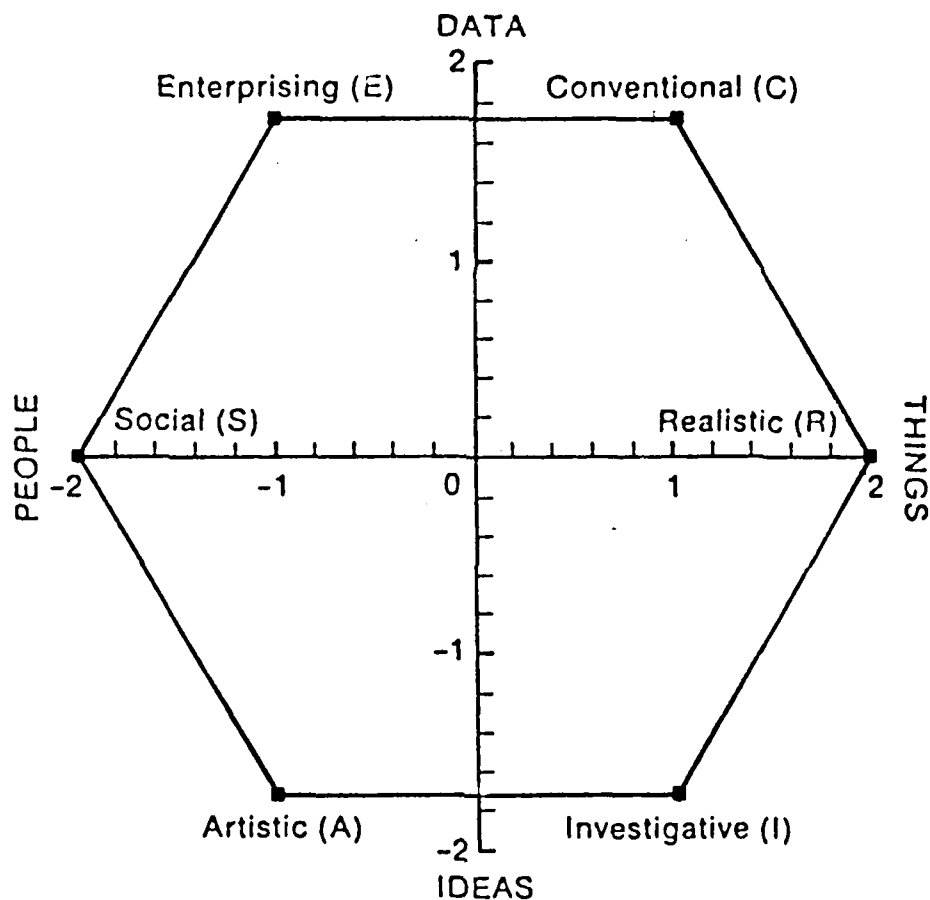
Locations of Holland's types on the data/ideas and things/people dimensions are shown.

Figure 2.   Relationships among Holland's Types
According to the Hexagonal Model

Prediger's formulas for calculating scores on the two dimensions are:

Things/people score =

$(2.0 \times R) + (1.0 \times I) - (1.0 \times A) -$

$(2.0 \times S) - (1.0 \times E) + (1.0 \times C)$

Data/ideas score =

$(0.0 \times R) - (1.7 \times I) - (1.7 \times A) +$

$(0.0 \times S) + (1.7 \times E) + (1.7 \times C)$

Prediger graphed only the three highest personality interest scales as provided by the VPI, but in a subsequent study with Swaney, they used the raw scores on all six scales of the VPI in order to test congruence (24). They then calculated the arc tangent for these points. The arc tangent angle is used to represent occupations and individuals. The absolute distance in degrees between the individual angle and that of the occupation served as the measure of congruence. For example, if an occupation has an angle of 6 degrees and two individuals have angles of 180 degrees and 350 degrees, the second individual would be considered to be more congruent with that occupation than the first.

Procedures and Statistical Tests

Research Question One. Are there personality differences between satisfied officers in different career fields?

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The VPIs were sorted by AFSC and scored. Only the scores on the six basic scales, which run from zero to fourteen, were used, i.e., Realistic, Investigative, etc. Mean scores for the six scales were calculated for those individuals that reported career field satisfaction. The career fields were then typed in a manner similar to that used in the SCII Manual. The SCII method is based on Holland's method with some refinements. The SCII Manual used only average or above-average mean scores for typing occupations. For differentiated profiles where only one or two scales were high and the others were low, only the high scores were used to type that career field. In this study, scale scores of 4.5 or higher were used to type the career fields. When all scores were below 4.5, it would be less meaningful to type in the usual manner because scale scores for all occupations combined are skewed towards zero. In these cases, the highest mean score was used to type the career field, and if other scale scores were within .5 of the highest mean, they were also used. These career fields were then plotted on Prediger's graph, resulting in each career field being represented by a specific angle and graphical location.

After individual career fields were plotted, those that appeared to differ the most by angle and/or by distance were compared against each other for differences on the six basic personality scales. This selection method

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was used to eliminate the need to compare all possible career field pairings, a total of 120 combinations.

After the career fields to be compared were identified, the six basic scale scores for each group were compared for differences. Because the sample size for each career field was small and the assumption of an underlying normal distribution was not warranted, the Mann-Whitney U test, a program included in the Statistical Package for the Social Sciences (SPSS) was used. The Mann-Whitney is a nonparametric test that combines the scores for the two career fields on each basic scale. The scores are ranked by increasing size. The test statistic U is computed as the number of times a scale score from one career field precedes a score from the other. The rationale underlying this test is that if the samples are from the same population, the distribution of scale scores from the two career fields in the ranked list will be random; a nonrandom pattern will be indicated by an extreme value of U. The SPSS Mann-Whitney program calculates exact significance levels of U for small samples (less than thirty cases). For larger samples, the U statistic is converted to a normally distributed statistic, Z (22:228). A two-tailed significance level of .05 was used.

Research Question Two. Are individuals who are satisfied in their career fields more congruent with their career field than those who are dissatisfied?

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To answer this question, the degrees of congruence of those individuals dissatisfied with their career field were compared with the degree differences of those individuals satisfied with their career field. The angle for each career field, as typed and plotted in the first part of this procedure, served as the identifying location, or standard, for each career field. This location represents the composite personality type most satisfied in this career field. Angle differences were calculated for satisfied and dissatisfied individuals in all career fields. The congruence for the two groups, as measured in degrees, was compared with the Student's t-test. A two-tailed significance level of .05 was used.

Research Question Three. Are there personality differences between those officers who are satisfied with the Air Force organization and those who are dissatisfied?

To answer this question, individual officers were divided according to their responses to survey questions 8-11, which served to measure components of overall organizational satisfaction, such as, satisfaction with working for the organization, salary and benefits, fellow officers, and promotion opportunities.

The six basic scales for individuals that reported dissatisfaction were compared with scores of those reporting satisfaction on each question regarding organizational satisfaction. In addition, a comparison based

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upon a measure of total satisfaction was made. Total
satisfaction was measured by summing the scores of all
four questions. Those with total scores of 28 and above
(an average score of at least 7 per question) formed the
satisfied group. Those with scores of 22 or less consti-
tuted the dissatisfied group. A total score of 22 was used
to increase the sample size. This equates to an average
response of 5.5 per question and indicates at best that an
individual is neither satisfied nor dissatisfied with the
organization. Each comparison was done with the use of
the Student's t-test with a two-tailed significance level
of .05.

Research Question Four. Does the degree of congruence
between individuals and their organizations relate to their
organizational satisfaction?

To answer this question, the general theme scale
scores from the SCII Manual were used to type the organi-
zation. When those scores were substituted into Prediger's
formula, the organization received a score of 1.6 on the
things/people dimension and a .85 on the data/ideas
dimension. This point produced an angle of 28 degrees.
To test the relationship of congruence to satisfaction,
each individual's VPI score was plotted and the angle
difference from the 28 degree angle was calculated in
degrees. This difference was then paired with each
individual's five measures of organizational satisfaction.

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A correlation analysis was then conducted to determine the relationship of organizational congruence to the following variables: organizational satisfaction, benefits and salary satisfaction, fellow officer satisfaction, satisfaction with promotion opportunities, and total organizational satisfaction as determined by the composite score of the four preceding variables. Pearson correlation analysis was used with congruence as the independent variable and the satisfaction measures as dependent variables.

IV. Findings and Analysis

Introduction

This section presents the findings and analysis resulting from the procedures described in Chapter III. A description of the sample population is presented first, followed by a presentation of the results in the order of the four research questions.

Sample

Students from the Air Force Institute of Technology (AFIT) formed the sample for this research. Three hundred survey packages were distributed among students representing fourteen career fields. Of the 237 completed and returned, 193 were usable. The career field and sample sizes are listed in Table IV. During the course of this study, the 30XX and 51XX career fields were officially combined to form an information systems career field (49XX). They will be treated as separate career fields in this research, as they are still differentiated within their new career field.

Sample demographics are presented in Table V. The majority of the sample consists of male Captains in their early thirties with an average service time of six years.

TABLE IV

Sample Career Fields

Career Field	AFSC	Sample
Pilots	10XX	15
Navigators	15XX	19
Missile Operations	18XX	18
Space Operations	20XX	8
Acquisition Program Management	27XX	15
Development Engineering	28XX	22
Communications/Electronics	30XX	8
Aircraft Maintenance	40XX	14
Data Automation	51XX	14
Civil Engineering	55XX	16
Transportation	60XX	9
Supply Management	64XX	12
Acquisition Contracting/Manufacturing	65XX	16
Financial	67XX	7
Total		193

TABLE V

Sample Demographics

Factor	Grouping	Absolute Frequency (#)	Relative Frequency (%)
Sex	Male	170	88
	Female	23	12
Age	22 - 26	36	19
	27 - 30	68	35
	31 - 34	58	30
	35 - 40	31	16
Years of Service	1 - 5	57	30
	6 - 10	87	45
	11 - 16	42	22
	16 - 20	7	03
Officers with Prior Service		63	32
Rank	O-1	3	01
	O-2	29	16
	O-3	145	75
	O-4	15	7.5
	O-5	1	0.5

Responses to the questionnaire items other than the VPI are summarized in Appendix B.

Research Questions One

Are there personality differences between satisfied officers in different career fields?

Officers from fourteen career fields completed Holland's VPI and responded to a question used to measure career field satisfaction. Only the VPI data from those individuals that reported career field satisfaction were used to calculate mean scores for the six basic scales. The mean scores for each career field are displayed in Table VI.

The career fields were then typed, or coded, according to the method derived from the Manual for the SCII (Table VI). An example of typing follows: The mean scores for the Civil Engineer career field (55XX) were: $R = 6.6$, $I = 5.0$, $A = 0.8$, $S = 2.8$, $E = 3.2$, and $C = 2.0$. The R and I scales were equal to or above 4.5, so they were used to type this career field RI. Of the fourteen career fields typed in this study, only two had Realistic as their highest mean score. As can be noted from the Table VI, all six personality types are represented in the coding.

TABLE VI

Mean Scores and Holland Occupational Codes

	Mean Score on Six Basic Scales*						Holland Code
	R	I	A	S	E	C	
10XX	5.1	6.5	4.2	4.4	5.6	3.7	IER
15XX	6.9	6.3	2.1	3.5	2.9	2.1	RI
18XX	4.0	6.3	2.9	3.9	6.4	3.5	EI
20XX	1.8	4.0	3.3	2.2	3.3	1.7	I
27XX	3.6	3.1	1.9	3.0	4.1	3.6	ECR
28XX	5.1	5.6	3.5	1.5	3.6	1.4	IR
30XX[†]	4.4	5.6	5.6	2.6	2.0	0.6	IA
40XX	4.9	5.5	5.4	2.5	3.5	1.3	IAR
51XX[†]	3.0	5.1	3.0	1.3	1.9	2.9	I
55XX	6.6	5.0	.8	2.8	3.2	2.0	RI
60XX	5.5	4.0	5.5	7.8	7.0	4.3	SEA
64XX	4.5	6.4	3.5	1.6	5.3	2.4	IER
65XX	4.0	2.6	4.0	3.5	7.2	4.9	EC
67XX	5.5	5.5	3.0	4.0	4.8	7.3	CRI

*R = Realistic
 I = Investigative
 A = Artistic
 S = Social
 E = Enterprising
 C = Conventional

[†]Career Fields 30XX and 51XX have been combined to form the career field of Information Systems (49XX)

The next step was to determine if the career fields were significantly different from one another. They were plotted on Holland's hexagon with the use of Prediger's graphing method. The plotted career fields were all clustered near the origin. Therefore, the entire area of the Prediger's graph, which measures -60 to +60 units on its two dimensions, was not needed. Only the area from -20 to +20 on each dimension was used to display the career fields by location, visually emphasizing their locational differences. Figure 3 displays the career fields graphically.

Those that appeared to differ the most by angle and/or distance on Figure 3 were selected for comparison. Eight combinations of career fields were selected. The basic scales from the two career fields were compared with the use of the Mann-Whitney U test. Results are displayed in Table VII. An example of one comparison follows: The Acquisition Contracting/Manufacturing career field (65XX), coded EC, was compared with the Communication Electronics career field (30XX), coded IA. The results of the comparison revealed that the 30XX career field was significantly more Investigative ($p < .02$) and the 65XX career field was significantly more Enterprising ($p < .002$). There was also an indication that the 65XX career field was more Conventional as well, but this difference was only significant to the .10 level.

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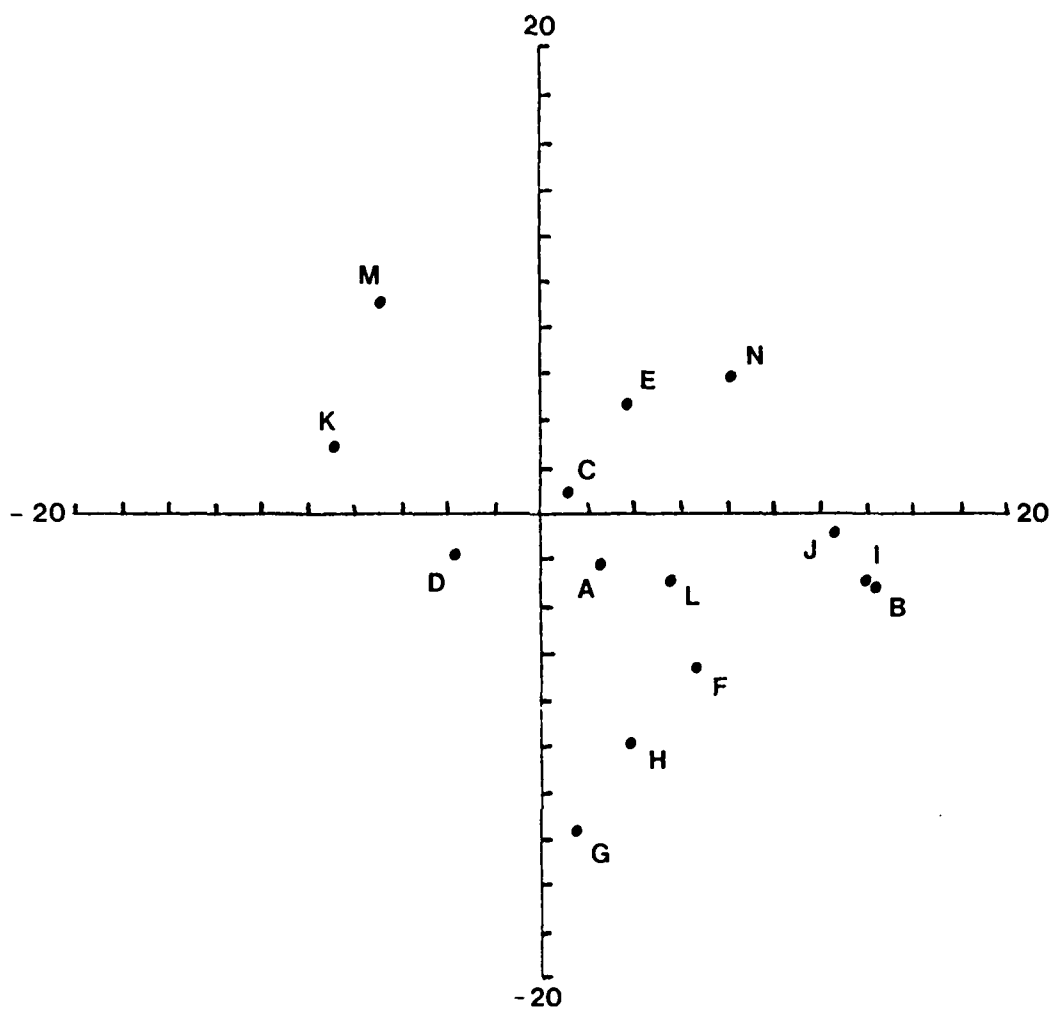
A = 10XX	D = 20XX	H = 40XX	L = 64XX
B = 15XX	E = 27XX	I = 51XX	M = 65XX
C = 18XX	F = 28XX	J = 55XX	N = 67XX
	G = 30XX	K = 60XX	

Figure 3. Career Fields Plotted on Prediger's Graph

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TABLE VII

Differences on the Six Basic Scales as a Result of Career Field Comparisons

	Personality Type*					
	R	I	S	C	E	A
65XX (EC) & 30XX (IA) n = 13 n = 5	–	3	–	1	4	–
67XX (CRI) & 55XX (RI) n = 4 n = 12	–	–	–	3	–	–
67XX (CRI) & 28XX (IR) n = 4 n = 17	–	–	2	3	–	–
30XX (RA) & 55XX (RI) n = 5 n = 12	–	None Found			–	–
60XX (SEA) & 64XX (IER) n = 6 n = 8	–	–	4	–	–	–
65XX (EC) & 40XX (IAR) n = 13 n = 11	–	–	–	3	3	–
60XX (SEA) & 51XX (I) n = 6 n = 9	–	–	4	–	3	–
67XX (CRI) & 15XX (RI) n = 4 n = 13	–	–	–	1	–	–

*R = Realistic
I = Investigative
S = Social
C = Conventional
E = Enterprising
A = Artistic

Levels of Significance:
1 = .10
2 = .05
3 = .02
4 = .002

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The results of the comparisons show that six of the eight comparisons produced significant differences. Of the ten specific differences identified, three were found to be significant to the .002 level, six at the .02 level, and one at the .05 level. Two additional differences were observed at the .10 level that were not statistically significant but are worth noting. Of special note is the fact that all but one of the significant differences were directly associated with the scales used to type the career fields. In the 65XX (EC), 30XX (IA) comparison, it was the 65XX's E scale that was significantly higher than the 30XX's E scale, and likewise, it was the 30XX's I scale that was significantly higher than the 65XX's. These differences serve as an indication that the code types used to classify career fields can be used to distinguish one career field from another.

Also, as was expected, the codes assigned to Air Force career fields were very similar to the codes used to classify their civilian counterparts. A comparison of Air Force and civilian codes is displayed in Table VIII. For example, the Air Force acquisition career field was typed EC, and a similar civilian occupation, manager of procurement services, was coded ECS in the Dictionary of Holland Occupational Codes. In the transportation area, an Air Force transportation officer is coded SEA, and a civilian superintendent of transportation is coded ESR.

TABLE VIII

Comparison of Air Force Officer Career Field Codes and Civilian Occupational Codes

Air Force Career Field	Holland Code	Civilian Occupation*	Holland Code
Pilot	IRE	Airplane Pilot	IER
Navigator	RI	Navigator	IER
Acquisition Officer (27XX)	ECR	Manager Procurement Services	ECS
Acquisition Officer (65XX)	EC	Manager Procurement Services	ECS
Development Engineering	IR	Engineer of System Development	IER
Civil Engineers	RI	Civil Engineers	ISR
Transportation Officer	SEA	Superintendent of Transportation	ESR
Communication Electronics	IA	Manager Electronic Data Processing	IEA
Supply Officer	IER	Supply Controller	RIE
Financial Officer	CRI	Financial Analyst	CSI
Data Automation	I	Computer Applications Engineer	IRE
Aircraft Maintenance	IAR	Superintendent of Maintenance	ERI

Source: Dictionary of Holland Occupational Codes

Of the twelve comparisons made, eleven had at least two

codes match. No direct or indirect civilian occupations

similar to missile operations or space operations were

found in the <u>Dictionary</u> <u>of</u> <u>Holland</u> <u>Occupational</u> <u>Codes</u>.

Research Question Two

Are individuals who are satisfied in their career

fields more congruent with their career field than those

who are dissatisfied?

In order to address this issue, the angle differences

between satisfied and dissatisfied individuals and their

respective career fields needed to be calculated and

compared. There were 26 individuals who were at least

moderately dissatisfied with their career fields. Their

angle differences, as measured in degrees, were compared

with the angle differences calculated for a group of 26

individuals randomly selected from a population of 138

who reported career field satisfaction. The number of

satisfied individuals selected per career field matched

the number of dissatisfied individuals found in each career

field. The degree differences for the two groups were

compared with the Student's t-test. The mean congruence

scores and standard deviations are displayed in Table IX.

Those individuals that reported higher satisfaction were

more congruent with their career fields than those who

reported dissatisfaction (p < .001).

TABLE IX

T-Test of Congruence for Officers Satisfied and Dissatisfied with their Career Fields

| Group | Sample Size | Congruence (in degrees) | | Two-Tail Probability | Degrees of Freedom |
		Mean	Standard Deviation		
Satisfied	26	87.41	7.26		
				P < .001	50
Dissatisfied	26	52.83	6.70		

Note: Congruence scores range from 0 to 180, with 0 equaling maximum congruence.

Research Question Three

Are there personality differences between those officers who are satisfied with the Air Force organization and those who are dissatisfied?

To address this question, the sample population was to be separated into two groups, satisfied and dissatisfied. However, individuals reporting dissatisfaction were too few to establish a sample size fit for comparison. So, in order to increase the sample size and use the Student's t-test, those individuals that reported moderate dissatisfaction were also included. The criteria for the satisfied group was not altered.

Five comparisons between satisfied and dissatisfied groups were made, based on five measures of organizational satisfaction. Four separate measures of organizational satisfaction were obtained by questions 8-11 on the survey questionnaire, with a fifth measure of total organizational satisfaction obtained by summing the responses of these four questions. The four main aspects of organizational satisfaction were as follows: satisfaction with working for the organization, satisfaction with benefits and salary, satisfaction with fellow officers, and satisfaction with promotion opportunities. The six basic scales for the two groups were compared. The results of the five comparisons are presented in sequence.

In regard to satisfaction with working for the Air
Force organization (Table X), the satisfied and dissatis-
fied groups were typed as IR and IA, respectively. The
dissatisfied group was significantly more Artistic than
the satisfied group (p < .05). Also, as shown in Table X,
the dissatisfied group was somewhat more Investigative
(p < .07) and more Social (P < .10).

For satisfaction with benefits and salary (Table XI),
the satisfied group was again typed IR. The dissatisfied
group was typed I. Table XI displays that there were no
significant differences between the two groups.

For satisfication with fellow officers (Table XII),
the satisfied group was again IR. However, the
dissatisfied group changed and was typed as Enterprising.
There were no significant differences between these two
groups.

Displayed in Table XIII is the comparison of the two
groups satisfied and dissatisfied with their promotion
opportunities. This time the satisfied group was typed as
IRE, with the A scale at 4.4. The dissatisfied group was
typed I. Of significance was the difference between the
two groups on the Artistic scale. This time, the satisfied
group was distinctively more Artistic (p < .01).

On the measure of total organizational satisfaction
(Table XIV), the code IRA identified the satisfied group,
and the occupational code I described the dissatisfied

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TABLE X

Comparison of Officer Personalities Satisfied
and Dissatisfied with Working for
the Air Force Organization

Variable	Group*	Mean	Standard Deviation	F Value	Two-Tail Probability**
R	Satisfied	4.69	3.43		
	Dissatisfied	4.09	3.73	1.18	.57
I	Satisfied	4.90	3.83		
	Dissatisfied	7.09	4.37	1.30	.07
S	Satisfied	2.88	2.94		
	Dissatisfied	4.45	4.66	2.51	.10
C	Satisfied	2.87	3.06		
	Dissatisfied	2.45	4.16	1.85	.62
E	Satisfied	4.14	3.23		
	Dissatisfied	4.36	4.06	1.57	.83
A	Satisfied	3.44	3.53		
	Dissatisfied	5.55	2.38	2.20	.05

*Sample size:
 Satisfied   n = 149
 Dissatisfied   n = 11

**Degrees of Freedom: 158

Variables:
R = Reliability
I = Investigative
S = Social
C = Conventional
E = Enterprising
A = Artistic

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TABLE XI

Comparison of Officer Personalities Satisfied
and Dissatisfied with Benefits and Salary

Variable	Group*	Mean	Standard Deviation	F Value	Two-Tail Proba-bility**
R	Satisfied	4.78	3.39	1.23	.31
	Dissatisfied	4.00	3.75		
I	Satisfied	4.71	3.56	1.46	.31
	Dissatisfied	5.54	4.30		
S	Satisfied	2.95	2.90	1.44	.67
	Dissatisfied	2.67	3.49		
C	Satisfied	2.62	2.99	1.12	.23
	Dissatisfied	1.83	2.82		
E	Satisfied	4.06	3.35	1.18	.89
	Dissatisfied	3.96	3.09		
A	Satisfied	3.90	3.67	1.34	.12
	Dissatisfied	2.63	3.17		

*Sample size:
  Satisfied   n = 128
  Dissatisfied   n = 24

**Degrees of Freedom: 150

Variables:
R = Reliability
I = Investigative
S = Social
C = Conventional
E = Enterprising
A = Artistic

TABLE XII

Comparison of Officer Personalities Satisfied
and Dissatisfied with Fellow Officers

Variable	Group*	Mean	Standard Deviation	F Value	Two-Tail Probability**
R	Satisfied	4.58	3.56	2.57	.30
	Dissatisfied	3.40	2.22		
I	Satisfied	5.06	3.94	1.93	.25
	Dissatisfied	3.60	2.84		
S	Satisfied	2.79	2.99	1.43	.91
	Dissatisfied	2.90	3.57		
C	Satisfied	2.62	2.91	1.96	.20
	Dissatisfied	3.90	4.12		
E	Satisfied	4.25	3.35	1.22	.39
	Dissatisfied	5.20	3.71		
A	Satisfied	3.67	3.61	1.58	.36
	Dissatisfied	2.60	2.88		

*Sample size: Variables:
 Satisfied n = 142 R = Reliability
 Dissatisfied n = 10 I = Investigative
            S = Social
            C = Conventional
**Degrees of Freedom: 150 E = Enterprising
            A = Artistic

TABLE XIII

Comparison of Officer Personalities Satisfied
and Dissatisfied with Promotion Opportunities

Variable	Group*	Mean	Standard Deviation	F Value	Two-Tail Probability**
R	Satisfied	4.46	3.23		
	Dissatisfied	4.42	4.14	1.64	.96
I	Satisfied	4.93	3.66		
	Dissatisfied	5.45	4.10	1.25	.48
S	Satisfied	2.95	2.88		
	Dissatisfied	2.30	3.48	1.44	.28
C	Satisfied	2.63	2.87		
	Dissatisfied	2.58	3.48	1.48	.92
E	Satisfied	4.58	3.62		
	Dissatisfied	4.06	2.94	1.52	.45
A	Satisfied	4.40	3.77		
	Dissatisfied	2.55	2.91	1.68	.01

*Sample size: Variables:
 Satisfied   n = 121   R = Reliability
 Dissatisfied   n = 33   I = Investigative
                                   S = Social
                                   C = Conventional
**Degrees of Freedom: 152   E = Enterprising
                                   A = Artistic

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TABLE XIV

Comparison of Officer Personalities Satisfied
and Dissatisfied with Measure of
Total Organizational Satisfaction

Variable	Group*	Mean	Standard Deviation	F Value	Two-Tail Probability**
R	Satisfied	4.83	2.94		
	Dissatisfied	3.24	3.04	1.07	.03
I	Satisfied	5.11	4.03		
	Dissatisfied	5.48	4.11	1.04	.70
S	Satisfied	3.55	3.37		
	Dissatisfied	2.93	4.24	1.59	.48
C	Satisfied	2.82	2.85		
	Dissatisfied	1.72	3.02	1.12	.11
E	Satisfied	4.15	3.31		
	Dissatisfied	3.62	3.29	1.01	.50
A	Satisfied	4.62	3.97		
	Dissatisfied	2.97	2.85	1.94	.06

*Sample size: Variables:
 Satisfied   n = 47   R = Reliability
 Dissatisfied   n = 29   I = Investigative
                                       S = Social
                                       C = Conventional
**Degrees of Freedom: 74   E = Enterprising
                                       A = Artistic

group. Of note here is the fact that the groups differed
significantly on their Realistic scores (p < .03); the
satisfied group's Realistic mean was 4.83 and the mean for
the dissatisfied group was 3.25. Of near significance was
the indication that satisfied officers are more Artistic
than their dissatisfied compatriots (p < .055). The
satisfied group also tended to be more Conventional.
However, this tendency was only marginally significant
(P < .11).

Research Question Four

Does the degree of congruence between individuals
and their organizations relate to their organizational
satisfaction?

Pearson correlation analysis was used to determine if
a linear relationship existed between congruence and five
variables associated with organizational satisfaction, the
same five measures used in question three. The results of
the correlation analysis are reported on Table XV.

No significant relationships were observed. The
expected positive relationship between congruence and
measures of organizational satisfaction were not found,
except for the measure of working for the Air Force
organization. Here, the correlation was r = .10, a
small relationship that was insignificant (p < .15).
Satisfaction with promotion opportunities is noted here

TABLE XV

Pearson Correlation Analysis of Congruence and
Five Variables of Organizational Satisfaction

Independent Variable	Dependent Variable	r	P
Congruence	Organization Working	.10	.15
	Benefits and Salary	-.01	.86
	Fellow Officers	-.04	.56
	Promotion Opportunities	-.11	.11
	Total Satisfaction	.03	.64

because a negative relationship was observed (r = -.11)
-- again, a small r value, and a significance level of
only .11.

Summary

Career fields, as measured by the personalities of
the satisfied officers within them, are statistically
different. Of the eight comparisons, six had one or more
significant differences, the majority of those differences
being significant to the .05 level or less. Many of the
career fields as coded in this study were, for the most
part, very similar to the codes used to classify their
civilian counterparts.

The match, or the degree of congruence, of individuals
to their career fields was found to be higher among those
satisfied with their career fields. Those individuals that
reported career field satisfaction were significantly more
congruent with their career fields than those that reported
dissatisfaction (p < .001).

As for the type of individuals that are satisfied
with the Air Force organization, the findings were mixed,
depending on the measures being studied. For the question
regarding satisfaction with working for the Air Force
organization, three strong but less than significant
differences were observed. The satisfied group was
less Investigative, less Social, and less Artistic.

No significant personality differences between groups that were satisfied and dissatisfied with benefits and salary or fellow officers were observed. For the measure of promotion satisfaction, the satisfied group was more Artistic than the dissatisfied group ($p < .01$), and for the measure of total organizational satisfaction, the satisfied group was significantly more Realistic ($p < .03$) and somewhat more Artistic, at a marginally significant level ($p < .055$).

The use of Pearson correlation analysis to test the relationship of congruence to measures of satisfaction revealed no statistically significant finding. There was a marginally significant negative relationship between congruence and satisfaction with promotion opportunities ($r = -.11$, $p < .11$). Satisfaction with working for the Air Force organization was positively correlated with congruence ($r = .10$, $p < .15$). All these relationships were small and failed to reach a significance level of .05.

V. Conclusions and Recommendations

This chapter will address the four specific research questions, in turn, to answer the primary research question. Conclusions and discussion of the findings will be presented, followed by recommendations for applying the research findings and for further research.

Research Question One. Are there personality differences between satisfied officers in different career fields?

Definite personality differences between satisfied officers in different career fields were observed. Although small sample sizes were used to classify the career fields and make these determinations, the fact that civilian counterparts have similar codes strengthens this conclusion.

More importantly, the personality differences between career fields promote the idea that the Air Force organization may be a microcosm of the work world or at least indicates that not all Air Force officers are the same.

The occupation of Air Force officer has been classified as Realistic in the SCII Manual. The results

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of this study provides strong evidence that this is not an accurate description of the occupation when broken down by career fields. It may be a description of the organization as a whole, but cannot be used to accurately classify individual Air Force officer career fields. In fact, in this study, twelve of the fourteen career fields were typed other than Realistic. For the most part, they were coded Investigative, with a few typed as Enterprising, Conventional, and even Social. Some of these types, by definition, are very dissimilar to the Realistic type characterization.

Overall, the final conclusion is that Holland's classification system has meaning when applied to the career fields of Air Force officers; career fields can be distinguished from one another with the use of his system.

Research Question Two. Are individuals who are satisfied in their career fields more congruent with their career field than those who are dissatisfied?

Air Force officers who were satisfied with their career fields were more congruent with their career field than those who were dissatisfied. However, this conclusion is somewhat biased because the same individuals used to establish each career field type also served as the population from which offices satisfied with their counterparts. Therefore, it is not surprising to find the satisfied group more congruent with their career field. On the other hand,

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the career fields as coded in this study by which the comparisons were made, stand virtually on their own. For the most part, they stand on their own because their codes were very similar to the codes used to describe civilian occupations with like occupational titles. Because of these similarities, the findings cannot be ignored.

Above all, despite the weakness in the method employed, the findings support the idea that congruence applies as well to Air Force officers and their career fields as it does to civilians in the work world.

Research Question Three. Are there personality differences between those officers who are satisfied with the Air Force organization and those who are dissatisfied?

Beyond the issue of the fit of individuals to career fields is the match of individuals to their organizations. The results of this portion of the study were as expected with one notable exception. As expected, tne satisfied group scored high on the Realistic scale, but they scored even higher on the Investigative scale. Thus, the satisfied group was coded IR. This is a reasonable outcome, when considering the fact that the sample population was made up of graduate students, a group expected to be Investigative. Also, as expected, the satisfied group was significantly more Realistic than their dissatisfied fellow officers on the measure of total satisfaction.

This significant difference was expected because Holland's theory states that the more an individual matches the organization, the higher his or her satisfaction. This also supports the notion that the SCII classification of the Air Force officer occupation is really a classification of the organization rather than the individual career fields.

The proposition that the Air Force organization is Realistic and that there are career fields very unlike the Realistic classification may not be as conflicting as it may appear. As mentioned in the literature review, organization and career field loyalties are on separate dimensions. Therefore, it may be possible that only the Realistic scale relates to organizational satisfaction and others have little or no relationship. Other possible reasons for this finding include the disproportionate representation of IRs in the sample or that some career fields are more congruent or mainstream to the organization than others.

The notable exception to the results was found among the groups satisfied and dissatisfied with their promotion opportunities. Both groups were typed IR, but the satisfied group was significantly more Artistic. This gives rise to the idea that scales other than those used to classify occupations may be useful in predicting performance. Also, it would be of interest to determine if

more successful officers are more Artistic than their less successful contemporaries.

Weakening the conclusions in this section were the small samples in the dissatisfied groups and the fact that individuals who reported only moderate satisfaction or were neither satisfied or dissatisfied were excluded from each comparison.

Research Question Four. Does the degree of congruence between an individual and the organization relate to the individual's organizational satisfaction?

As for the measure of congruence and factors associated with organizational satisfaction, only small and insignificant relationships were found. These findings might have been stronger if the Air Force organization were typed as IR instead of R, as in the SCII manual. It appears that a simple measure such as distance may be inadequate, or that the Air Force organization is not subject to a narrow classification because of its diversity in career fields. Organizational congruence may well be related to only one scale, such as Realistic, as suggested in the previous section, or it may be a combination of scales, such as I, R, A, which appear to be associated with total organizational satisfaction.

Primary Research Question. Can Air Force officer career fields be classified according to Holland's system,

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and can his theory of congruence explain career field and/or organizational satisfaction?

The answer to this question addresses career fields and the organization separately. The research question received an affirmative answer in regard to career fields. Holland's classification system has meaningful application to the career fields of Air Force officers. Congruence was also proven to be associated with career field satisfaction.

With regard to the organization, the answer to the primary question was mixed. The personality type satisfied with the organization was IR and was significantly more Realistic than the personality type dissatisfied with the organization. The expected linear relationship between congruence and satisfaction with the organization was not found.

Recommendations for Application of Research Findings

Application of Holland's work and that of others dealing with the area of matching individuals, occupations and organizations may well prove fruitful for the Air Force as an organization and to the individuals of its officer corps. Primarily, information about career fields and organizations provides a means for individuals to assess their compatibility with these various environments.

The individual officers' knowledge about themselves, career fields and the organization could be increased and, therefore, utilized at every stage of their careers. At the entry stage, individuals could use this information to assess their compatibility with the organization as a whole, helping to foster more confident decisions regarding their initial selection of a work organization. Also, when potential officers are looking for career fields within the Air Force, additional information, as provided by the classification system, could be used to assist them in making important initial career field selections.

The importance of the initial career field selection needs to be emphasized. Granted, the first job alone does not make or break an individual's career, but its impact cannot be underestimated because successful careers may depend on it. In addition to the reasons cited in the literature review, there are further implications as to the effects of that important initial career field choice on an Air Force officer's career. Criteria for promotion includes experience and levels of jobs held. If individuals enter an unsatisfying career field and then retrain to another career field after two to four years, they are that far behind their peers in experience and level of jobs held in that new career field. The extent to which retraining occurs could be a possible indication of how often these mismatches occur. Another reason for

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appropriate career field selection is that some career

fields have manning shortages which, if entered with less

than accurate expectations of the match between individual

and career field, may lock individuals into a dissatisfying

career field, an unfavorable situation for the individual

and, possibly, for the organization. The additional

information provided by applying vocational theories, like

Holland's, to the Air Force may increase the chances of

obtaining satisfying matches between individuals and their

career fields from the very start.

The use of vocational information could also benefit

officers at other stages of their careers. It could be

used by officers who are career broadening, involuntarily

separated, separating by choice, or retiring.

Benefits for the Air Force organization may be

produced through the implementation of vocational tools

which assist the process of matching individuals to career

fields. One benefit is the potential for a more satisfied

officer corps. When more individuals are matched to their

jobs, satisfaction and performance have been shown to

increase. Other benefits may be reduced turnover, less

retraining, higher personal commitment and involvement,

and reduced health problems. Another benefit is that voca-

tional information helps individuals manage their careers

more effectively which, in turn, assists the organization

in managing its most important resource, personnel.

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There appears to be a need for improving methods for finding satisfying career fields. In this study, 29 percent of the sample, consisting mostly of captains with six years of service and with an additional four-year commitment, were found to be no more than moderately satisfied with their career fields. These are individuals that appear to be career oriented and more likely to be satisfied with their career fields than more junior officers. It is expected that this percentage would be higher among more junior officers.

Therefore, it is recommended that all Air Force officer career fields be classified with the VPI or a more precise instrument, such as the SCII, and that this information be made available to all officers for making career field selection decisions. Successful career development is essential to the Air Force mission, and a career is made up of an officer and the jobs he or she holds. If officers fit their jobs, they are more likely to be satisfied, and if they are satisfied, they are more likely to achieve higher levels of performance. With increased satisfaction and performance as a result of officer-career field match, efforts to facilitate an optimal match should be undertaken, and the place to start is with classifying all career fields according to the methods employed by the likes of Holland, Strong and Campbell.

Recommendations for Further Research

The purpose of this study was to determine the potential usefulness of Holland's theories within the Air Force officer corps. The results clearly indicated that Air Force officers and career fields are very different and that the degree of match between them was significantly related to job satisfaction. Therefore, a research process is outlined for the development of this useful career guidance information.

First, all officer career fields need to be classified at least by Holland's system. Where Holland's VPI is more general in nature, the more precise methods employed by the Strong-Campbell Interest Inventory could be utilized to provide more refined career field classifications. To more accurately classify the career fields, data from larger, more representative samples should be collected.

As a second step, these career fields codes could then be used with an independent sample to test Holland's congruence theory. This could be done to validate the results of this study that indicated that congruence was significantly related to career field satisfaction.

Finally, this information could then be made available to all officers to assist them in their career decisions. In a longitudinal design, the usefulness of the information could be evaluated by comparing groups of officers who used the additional information against those who did not have

the information available when they made their career field selections. Such measures as retention, career field satisfaction, number of retrainings, and reasons for retraining could be compared.

The monetary resources spent on such research would be minute compared to the potential returns. When the largest portion of the Air Force budget is dedicated to personnel compensation and support, the need for effective utilization of those human resources cannot be overstated. The Air Force recognizes this need and provides various means to increase the utilization of its personnel through career development. However, one key prerequisite for effective career development that receives less emphasis than it deserves is that of selecting the appropriate career or career field to begin with. The work of Holland and others clearly provides a potentially valuable source of information in making that very important decision. A potential win-win situation would be created; overall levels of job satisfaction may increase, a goal in itself, and sure to produce other benefits for the Air Force organization and its people.

Appendix A: Survey Questionnaire

This questionnaire contains thirteen items. Please complete all items by circling the response that applies to you, or fill in blanks as necessary.

1. RANK: 0-1   0-2   0-3   0-4   0-5

2. YEARS OF MILITARY SERVICE: _____

            YEARS ENLISTED: _____

        YEARS COMMISSIONED: _____

3. AGE: _____

4. SEX: M   F

5. What is your Air Force career intent?

1	2	3	4	5
Definitely Non-Career	Most Likely Non-Career	Undecided	Most Likely Career	Definitely Career

6. What was your career field prior to AFIT?

    (i.e., 1825, 6524) _____

For questions 7 through 11, the scale is defined as follows:

        1 = Extremely Dissatisfied
        2 = Very Dissatisfied
        3 = Dissatisfied
        4 = Moderately Dissatisfied
        5 = Neither Satisfied or Dissatisfied
        6 = Moderately Satisfied
        7 = Satisfied
        8 = Very Satisfied
        9 = Extremely Satisfied

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7. What was your overall level of satisfaction with your career field <u>prior to</u> AFIT?

    1   2   3   4   5   6   7   8   9

8. What is your overall level of satisfaction with the Air Force as an organization to work for?

    1   2   3   4   5   6   7   8   9

9. What is your level of satisfaction with your salary and benefits?

    1   2   3   4   5   6   7   8   9

10. What is your level of satisfaction with your fellow officers in general?

    1   2   3   4   5   6   7   8   9

11. What is your level of satisfaction with your promotion opportunities?

    1   2   3   4   5   6   7   8   9

12. What is the <u>highest</u> rank you expect to obtain?

    0-3   0-4   0-5   0-6   0-7   0-8+

13. What rank at a <u>minimum</u> do you expect to obtain?

    0-3   0-4   0-5   0-6   0-7   0-8+

Appendix B: Analysis of Survey Responses

SURVEY QUESTION 1: RANK

CATEGORY	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (%)	ADJUSTED FREQUENCY (%)	CUMULATIVE ADJ FREQ (%)
0-1	3	1.6	1.6	1.6
0-2	29	15.0	15.0	16.6
0-3	145	75.1	75.1	91.7
0-4	15	7.8	7.8	99.5
0-5	1	0.5	0.5	100.0
TOTAL	193	100.0	100.0	

SURVEY QUESTION 2A: YEARS OF MILITARY SERVICE

CATEGORY	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (%)	ADJUSTED FREQUENCY (%)	CUMULATIVE ADJ FREQ (%)
1	2	1.0	1.0	1.0
2	1	0.5	0.5	1.6
3	13	6.7	6.7	8.3
4	20	10.4	10.4	18.7
5	19	9.8	9.8	28.5
6	21	10.9	10.9	39.4
7	19	9.8	9.8	49.2
8	20	10.4	10.4	59.6
9	9	4.7	4.7	64.2
10	19	9.8	9.8	74.1
11	8	4.1	4.1	78.2
12	13	6.7	6.7	85.0
13	10	5.2	5.2	90.2
14	8	4.1	4.1	94.3
15	1	0.5	0.5	94.8
16	4	2.1	2.1	96.9
17	2	1.0	1.0	97.9
19	2	1.0	1.0	99.0
20	1	0.5	1.0	99.5
21	1	0.5	1.6	100.0
TOTAL	193	100.0	100.0	

SURVEY QUESTION 2B: YEARS ENLISTED

CATEGORY	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (%)	ADJUSTED FREQUENCY (%)	CUMULATIVE ADJ FREQ (%)
0	130	67.4	67.4	67.4
1	6	3.1	3.1	70.5
2	9	4.7	4.7	75.1
3	4	2.1	2.1	77.2
4	14	7.3	7.3	84.5
5	5	2.6	2.	87.0
6	3	1.6	1.6	88.6
7	4	2.1	2.1	90.7
8	7	3.6	3.6	94.3
9	4	2.1	2.1	96.4
10	4	2.1	2.1	98.4
12	3	1.6	1.6	100.0
TOTAL	193	100.0	100.0	

SURVEY QUESTION 2C: YEARS COMMISSIONED

CATEGORY	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (%)	ADJUSTED FREQUENCY (%)	CUMULATIVE ADJ FREQ (%)
1	2	1.0	1.0	1.0
2	2	1.0	1.0	2.1
3	21	10.9	10.9	13.0
4	26	13.5	13.5	26.4
5	31	16.1	16.1	42.5
6	34	17.6	17.6	60.1
7	22	11.4	11.4	71.5
8	15	7.8	7.8	79.3
9	8	4.1	4.1	83.4
10	9	4.7	4.7	88.1
11	6	3.1	3.1	91.2
12	7	3.6	3.6	94.8
13	5	2.6	2.6	97.4
14	3	1.6	1.6	99.0
15	1	0.5	0.5	99.5
16	1	0.5	0.5	100.0
TOTAL	193	100.0	100.0	

SURVEY QUESTION 3: AGE

CATEGORY	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (%)	ADJUSTED FREQUENCY (%)	CUMULATIVE ADJ FREQ (%)
22	1	0.5	0.5	0.5
24	5	2.6	2.6	3.1
25	14	7.3	7.3	10.4
26	14	7.3	7.3	17.6
27	16	8.3	8.3	25.9
28	16	8.3	8.3	34.2
29	18	9.3	9.3	43.5
30	18	9.3	9.3	52.8
31	19	9.8	9.8	62.7
32	17	8.8	8.8	71.5
33	12	6.2	6.2	77.7
34	10	6.2	6.2	82.9
35	17	8.8	8.8	91.7
36	4	2.1	2.1	93.8
37	3	1.6	1.6	95.3
38	4	2.1	2.1	97.4
39	3	1.6	1.6	99.0
40	2	1.0	1.0	100.0
TOTAL	193	100.0	100.0	

SURVEY QUESTION 4: SEX

CATEGORY	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (%)	ADJUSTED FREQUENCY (%)	CUMULATIVE ADJ FREQ (%)
Males	170	88.1	88.1	88.1
Females	23	11.9	11.9	100.0
TOTAL	193	100.0	100.0	

SURVEY QUESTION 5:   AIR FORCE CAREER INTENT

CATEGORY	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (%)	ADJUSTED FREQUENCY (%)	CUMULATIVE ADJ FREQ (%)
1	1	0.5	0.5	0.5
2	8	4.1	4.1	4.7
3	19	9.8	9.8	14.5
4	79	40.9	40.9	55.4
5	86	44.6	44.6	100.0
TOTAL	193	100.0	100.0	

SURVEY QUESTION 6:   CAREER FIELD

Career Field	AFSC	Sample
Pilots	10XX	15
Navigators	15XX	19
Missile Operations	18XX	18
Space Operations	20XX	8
Acquisition Program Management	27XX	15
Development Engineering	28XX	22
Communications/Electronics	30XX	8
Aircraft Maintenance	40XX	14
Data Automation	51XX	14
Civil Engineering	55XX	16
Transportation	60XX	9
Supply Management	64XX	12
Acquisition Contracting/Manufacturing	65XX	16
Financial	67XX	7
TOTAL		193

SCALE FOR SURVEY QUESTIONS 7-11

1 = Extremely Dissatisfied   6 = Moderately Satisfied
2 = Very Dissatisfied   7 = Satisfied
3 = Dissatisfied   8 = Very Satisfied
4 = Moderately Dissatisfied   9 = Extremely Satisfied
5 = Neither Satisfied or
    Dissatisfied

SURVEY QUESTION 7: CAREER FIELD SATISFACTION

CATEGORY	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (%)	ADJUSTED FREQUENCY (%)	CUMULATIVE ADJ FREQ (%)
2	3	1.6	1.6	1.6
3	5	2.6	2.6	4.1
4	16	8.3	8.3	12.4
5	5	2.6	2.6	15.0
6	27	14.0	14.0	29.0
7	53	27.5	27.5	56.5
8	64	33.2	33.2	89.6
9	20	10.4	10.4	100.0
TOTAL	193	100.0	100.0	

SURVEY QUESTION 8: SATISFACTION WITH WORKING FOR THE AIR FORCE ORGANIZATION

CATEGORY	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (%)	ADJUSTED FREQUENCY (%)	CUMULATIVE ADJ FREQ (%)
2	1	0.5	0.5	0.5
3	3	1.6	1.6	2.1
4	6	3.1	3.1	5.2
5	5	2.6	2.6	7.8
6	32	16.6	16.6	24.4
7	89	46.1	46.1	70.5
8	44	22.8	22.8	93.3
9	13	6.7	6.7	100.0
TOTAL	193	100.0	100.0	

SURVEY QUESTION 9:   SALARY AND BENEFITS SATISFACTION

CATEGORY	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (%)	ADJUSTED FREQUENCY (%)	CUMULATIVE ADJ FREQ (%)
3	6	3.1	3.1	3.1
4	16	8.3	8.3	11.4
5	8	4.1	4.1	15.5
6	39	20.2	20.2	35.8
7	68	35.2	35.2	71.0
8	46	23.8	23.8	94.8
9	10	5.2	5.2	100.0
TOTAL	193	100.0	100.0	

SURVEY QUESTION 10:   FELLOW OFFICERS SATISFACTION

CATEGORY	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (%)	ADJUSTED FREQUENCY (%)	CUMULATIVE ADJ FREQ (%)
3	3	1.6	1.6	1.6
4	7	3.6	3.6	5.2
5	17	8.8	8.8	14.0
6	29	15.0	15.0	29.0
7	81	42.0	42.0	71.0
8	50	25.9	25.9	96.9
9	6	3.1	3.1	100.0
TOTAL	193	100.0	100.0	

SURVEY QUESTION 11:   PROMOTION OPPORTUNITIES SATISFACTION

CATEGORY	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (%)	ADJUSTED FREQUENCY (%)	CUMULATIVE ADJ FREQ (%)
1	2	1.0	1.0	1.0
2	1	0.5	0.5	1.6
3	8	4.1	4.1	5.7
4	21	10.9	10.9	16.6
5	9	4.7	4.7	21.2
6	35	18.1	18.1	39.4
7	73	37.8	37.8	77.2
8	32	16.6	16.6	93.8
9	12	6.2	6.2	100.0
TOTAL	193	100.0	100.0	

SURVEY QUESTION 12:   HIGHEST RANK EXPECTED

CATEGORY	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (%)	ADJUSTED FREQUENCY (%)	CUMULATIVE ADJ FREQ (%)
3	6	3.1	3.1	3.1
4	17	8.8	8.8	11.9
5	61	31.6	31.6	43.5
6	88	45.6	45.6	89.1
7	14	7.3	7.3	96.4
8	7	3.6	3.6	100.0
TOTAL	193	100.0	100.0	
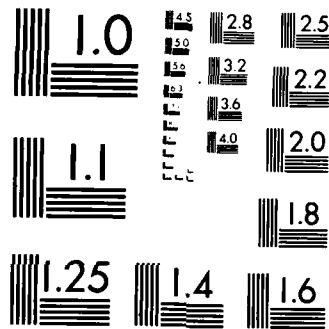
SURVEY QUESTION 13:   MINIMUM RANK EXPECTED

CATEGORY	ABSOLUTE FREQUENCY	RELATIVE FREQUENCY (%)	ADJUSTED FREQUENCY (%)	CUMULATIVE ADJ FREQ (%)
3	22	11.4	11.4	11.4
4	56	29.0	29.0	40.4
5	93	48.2	48.2	88.6
6	22	11.4	11.4	100.0
TOTAL	193	100.0	100.0	

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Thesis Advisor: Benjamin L. Dilla, Captain, USAF
Assistant Professor of Organizational Behavior Management

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The purpose of this research was to apply John Holland's "Theory of Careers" to the Air Force officer corps to explain career field and/or organizational satisfaction. Holland's theory states that work environments (occupations and organizations) and individuals are subject to classification, and the match, or "congruence," between individuals and their work environments can be used to predict job related outcomes, such as job satisfaction. To test the applicability of his theory among the Air Force officer corps, 193 officers from fourteen career fields completed a survey questionnaire and a Vocational Preference Inventory, a personality inventory developed by Holland for classifying individuals and work environments. Results indicated Air Force officer career fields are quite different from one another and their Holland classifications closely resemble classifications used to identify their civilian counterparts. A Mann-Whitney U test demonstrated significant personality differences between career fields. Eight comparisons were made, six resulting in significant differences. The congruence between individuals and their career fields and career field satisfaction was also tested. The results of a Student's t-test indicated that individuals satisfied with their career fields were more congruent with their career fields, than those dissatisfied. As for organizational satisfaction, one type of personality was most often found to be satisfied with the organization. The relationship of congruence and organizational satisfaction was measured with Pearson's correlation analysis, and no significant relationship was identified. The conclusion was that Holland's theories can be used in the Air Force to classify career fields and that the match between officers and their career fields is related to career field satisfaction. It was therefore recommended that the Air Force classify all career fields, thus providing valuable information to Air Force officers in making career related decisions.

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